

Disease: Tularemia

*** This organism is a potential bioterrorist agent. See “Special Considerations for Bioterrorism” on page 3.**

Clinical Features: Most often it presents as an indolent ulcer at the site of introduction of the organism, together with swelling of the regional lymph nodes (ulceroglandular type). There may be no apparent primary ulcer, but only one or more enlarged and painful lymph nodes that may suppurate (glandular type). Ingestion of organisms in contaminated food or water may produce a painful pharyngitis (with or without ulceration), abdominal pain, diarrhea and vomiting (oropharyngeal type). Inhalation of infectious material may be followed by pneumonic involvement or a primary septicemic syndrome; bloodborne organisms may localize in the lung and pleural spaces (pleuropulmonary type). Pneumonia may complicate all clinical types

Organism: *Francisella tularensis* (formerly *Pasteurella tularensis*) - gram-negative nonmotile coccobacillus. Wild animals such as rabbits, hares, voles, muskrats, and beavers; some domestic animals; and certain hard ticks serve at the reservoir.

Laboratory Test(s): Bacterial culture of blood, sputum, ulcer exudate, or lymph node aspirate. Rapid identification by DFA in the same specimens. KDHEL provides both culture testing and DFA identification.

Treatment: Streptomycin or gentamicin given for 7-14 days is the drug of choice.

Incubation Period: Related to virulence of infecting strain and to size of inoculum; 1-14 days, usually 3-5 days.

Mode of Transmission: Through the bite of certain arthropods (ticks or deer flies), by inoculation of skin, conjunctival sac or oropharyngeal mucosa with contaminated water, blood or tissue while handling carcasses of infected animals, by handling or ingesting insufficiently cooked meat of infected animal hosts; by drinking contaminated water; by inhalation of dust from contaminated soil, grain or hay; rarely, from bites of coyote, squirrel, skunk, hog, cat and dog whose mouth presumably was contaminated from eating an infected animal; and from contaminated pelts and paws of animals. Laboratory infections occur and frequently present as a primary pneumonia or typhoidal tularemia.

Period of Communicability: Not directly transmitted from person to person.

Susceptibility: All ages are susceptible, and long-term immunity follows recovery; however, reinfection has been reported in laboratorians.

Occurrence: Tularemia occurs throughout North America and in many parts of continental Europe, the former Soviet Union, China, Japan and Mexico.

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Outbreaks: Outbreaks are usually limited to persons at risk due to occupational or recreational exposure to infected animals or their habitat, such as rabbit hunters trappers, persons exposed to ticks, biting insects and laboratory technicians working with *F. tularensis*. Investigation of the source of infection is important in each case.

Surveillance Case Definition: A confirmed case must be clinically compatible and with serological lab confirmation, or with culture lab confirmation regardless of clinical presentation.

Clinical criteria: An illness characterized by several distinct forms, including:

- Ulceroglandular (cutaneous ulcer with regional lymphadenopathy)
- Glandular (regional lymphadenopathy with no ulcer)
- Oculoglandular (conjunctivitis with preauricular lymphadenopathy)
- Oropharyngeal (stomatitis or pharyngitis or tonsillitis and cervical lymphadenopathy)
- Intestinal (intestinal pain, vomiting, and diarrhea)
- Pneumonic (primary pleuropulmonary disease)
- Typhoidal (febrile illness without early localizing signs and symptoms)

Clinical diagnosis is supported by evidence of exposure as described above.

Laboratory criteria: Isolation of *F. tularensis* in a clinical specimen or fourfold or greater rise in serum antibody titer to *F. tularensis* antigen.

Definition of a contact: Not directly transmitted from person to person.

Case Investigation: Search for sources of infection related to arthropods, animal hosts, water, soil and crops.

Methods of Control: Educate the public to avoid bites of ticks, flies and mosquitoes and to avoid drinking, bathing, swimming or working in untreated water where infection prevails among wild animals. Use impervious gloves when skinning or handling animals, especially rabbits. Cook the meat of wild rabbits and rodents thoroughly. Prohibit interstate or inter-area shipment of infected animals or their carcasses.

Isolation: Drainage/secretion precautions for open lesions.

Quarantine: none

Follow-up: N/A

Reporting Requirements:

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1. Complete Kansas Notifiable Disease Form or enter into HAWK.
2. FAX forms to: 1-877-427-7318, or
3. Mail forms to: Epidemiologic Services Section - KDHE
 Landon State Office Building, Room 1051S
 900 SW Jackson Street
 Topeka, KS 66612-1290
4. For technical assistance questions, call 1-877-427-7317.

Special Considerations for Bioterrorism:

Identification and Reporting:

The following contact numbers are staffed 24 hours a day, 365 days a year. Contact in order of priority shown.

1. Kansas State Epidemiologist: 785-249-8903
2. KDHE Epidemiologist On-Call: 1-877-427-7317
3. CDC Bioterrorism response coordinator hotline: 404-639-0385

Likely Bioterrorist Scenarios:

If Tularemia were to be used for a bioterrorist attack, it would most likely be disseminated in aerosol form. Such an attack may or may not be announced by the perpetrator(s). It is very likely that public health and law enforcement authorities would not learn about such an attack until diagnosis of the first case (3-5 days later). Cases acquired by inhalation would present as primary pneumonia. Such cases require prompt identification and treatment to prevent a fatal outcome. All diagnosed cases of Tularemia, especially a cluster of cases should be reported as described earlier.

Safety Considerations for Public Health and Other Health Care Professionals:

Risks to public health, health care, or emergency response personnel should not be significant.

Continued

Event Response/Control Measures:

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Whether a bioterrorist event is announced or unannounced, local public health officials should play a central role in the event response and in the determination of appropriate control measures.

Control measures which should be addressed are:

Decontamination: Not necessary in the case of Tularemia.

Post-exposure prophylaxis: Not recommended for contacts. However if a known terrorist event has occurred all those exposed should receive appropriate post exposure prophylaxes.

Isolation: none

Quarantine: none

Other public health activities:

Line lists: A central responsibility of the LHD staff is to maintain detailed line lists of cases, suspect cases, and contacts with accurate identifying and locating information as well as appropriate epidemiological information. These lists will be essential for early identification of infection among those exposed.

Pharmaceuticals:

In the event of a bioterrorist induced outbreak of Tularemia, appropriate pharmaceuticals will be procured from the CDC National Pharmaceutical Stockpile Program. Procurement, storage, and distribution will be coordinated through the Kansas Department of Health and Environment.

Use of pharmaceuticals: Local and state public health officials must play a central role in determining which public health workers, health care workers, law-enforcement workers, emergency workers, and other essential personnel should have priority in receipt of limited pharmaceuticals.